HOST RANGE EXTENSION FOR *HAEMOPROTEUS COLUMBAE* KRUSE OF PIGEONS AND DOVES (COLUMBIDAE). *Memoirs of the Queensland Museum 43(2):462. 1999.*- In a survey conducted in cooperation with The Currumbin Wildlife Sanctuary, Gold Coast, Queensland, blood of 40 birds within the avian Family Columbidae was collected. Of 6 species examined, 2 species (*Columba livia* and *Leucosarcia melanoleuca*) were found to be positive for the haemosporidian parasite *Haemoproteus columbae*. Prevalence of the parasite in *C. livia* (Domestic Pigeon) was 58% (n=12), often with high intensity, while a single individual of *L. melanoleuca* (Wonga Pigeon) was sampled and positive for the parasite. This is the first record of *H. columbae* in a Wonga Pigeon in Australia.

Haemoproteus columbae (Kruse 1890) was described from gametocytic stages in the peripheral blood of *Columba livia* Gmelin. It is a pigmented, halteridial parasite found in the erythrocyte of its host. Host erythrocytes may show hypertrophy and the host cell nucleus may be displaced laterally. The number of pigment granules in the macrogametocyte averages 27 (Bennett & Peirce, 1990), but depends partly on the age of the parasite, with immature gametocytes having fewer than mature gametocytes (Mackerras & Mackerras 1960). Subsequent to Kruse's description of *H. columbae*, 6 additional species of Haemoproteidae were described from the same host family (*H. sacharovyi*, *H. maccallumi*, *H. melopeliae*, *H. palumbis*, *H. piresi*, *H. turtur*) but the validity of some of these species has been questioned (Mohammed 1958; Baker 1966) have questioned . All 7 species were redescribed by Bennett & Peirce (1990) using material from N America, Venezuela, S Africa, India and Zambia (after Kruse's original material of *H. columbae* was lost) and all except for *H. sacharovyi* Novy & MacNeal, 1904 (the only non-halteridial species) were considered to be synonymous with *H. columbae*.

Many of the 320 described species of Columbidae are cosmopolitan in their distribution. For example, *Columba livia* has a distribution which includes Europe, Africa and Asia and has been introduced into many parts of Australia. The distribution of *H. columbae* mirrors that of its hosts in tropical and subtropical areas (Bennett, Garnham and Fallis, 1965) and shows a surprisingly high degree of morphological consistency all over the world (Mohammed, 1958).

In Australia, *H. columbae* has been reported previously in *C. livia* by Wenyon (1926) and by Mackerras & Mackerras (1960) from Western Australia. The latter authors reported gametocytes of 13-15µm long and 4-5µm wide. The parasite did not encircle the ends of the nucleus which was displaced laterally. Infected red blood cells were slightly enlarged.

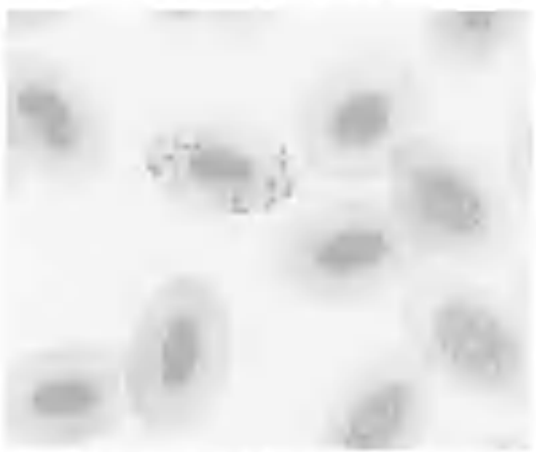

FIG. 1. Macrogametocyte of *Haemoproteus columbae* from the Wonga Pigeon, *Leucosarcia melanoleuca*.

The second Australian bird species found positive for *H. columbae* was the Superb Fruit-Dove, *Ptilinopus superbus* Temminck, from Townsville, reported by Breinl (1913). The gametocytes were up to 15µm long and 6µm wide. The nucleus was central, pigment in variable amounts, schizonts were not seen probably because the bird was in the chronic stage of infection (Breinl, 1913).

Morphometries of the material described here are taken from gametocytes in Giemsa-stained thin blood smears. Macrogametocytes (n = 30) in *C. livia* - 11.9µm long 3.25µm wide. Halteridial, occupying more than 50% of the host erythrocyte, margins entire, nucleus central or subcentral, number of pigment granules 29 (23-35), nuclear displacement ratio 0.54. Infected cells slightly enlarged. Microgametocytes (n= 15) in *C. livia – 11.1µm long 3.2µm wide. Halteridial, margins* entire, pigment granules 14 (9-18) placed mostly polar, nuclear displacement ratio 0.55. Infected cells slightly enlarged.

In the blood smears of *Leucosarcia melanoleuca* a total of 6 macrogametocytes were found, 3 with highly amoeboid margins, 3 with entire margins, all halteridial, 11.4µm (9.7-12.8µm) long, 2.3µm (1.9-2.6µm) wide, nucleus central, pigment granules 20 (17-22), nuclear displacement ratio 0.81. Poikilocytosis precluded measurement of host cell hypertrophy.

The low number of pigment granules found, compared to Bennett & Peirce's (1990) redescription of *H. columbae* may reflect immaturity of the gametocytes. Apart from this difference, the parasite of *L. melanoleuca* is consistently referable to *H. columbae*.

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